What is claimed is:

1. (Currently amended) A method of altering expression of glutamic acid decarboxylase (~~GAD~~ GAD_{65}) in a region of the central nervous system (CNS) of a subject comprising:

identifying a target site in the CNS that requires modification;

delivering a vector comprising a nucleotide sequence encoding glutamic acid decarboxylase 65 ((~~GAD~~ GAD_{65})) to the target site in the CNS; and

expressing ~~GAD~~ GAD_{65} in the target site.

2. (Original) The method of claim 1, wherein the vector is a viral vector.

3. (Original) The method of claim 2, wherein the a viral vector is selected from the group consisting of adenovirus vectors, herpes virus vectors, parvovirus vectors, and lentivirus vectors.

4. (Original) The method of claim 2, wherein the a viral vector is an adeno-associated viral vector.

5. (Withdrawn) The method of claim 5, wherein the vector is a non-viral vector.

6. (Withdrawn) The method of claim 5, wherein the non-viral vector is a liposome-mediated delivery vector.

7. (Original) The method of claim 1, wherein the vector is delivered using stereotaxic delivery.

8. (Original) The method of claim 1, wherein the target site in the central nervous system is a region of the brain.

9. (Original) The method of claim 8, wherein the region of the brain is selected from the group consisting of basal ganglia, subthalmic nucleus (STN), pedunculopontine nucleus (PPN), substantia nigra (SN), thalmus, hippocampus, cortex, and combinations thereof.

10. (Original) The method of claim 8, wherein the region of brain is the subthalmic nucleus (STN).

11. (Original) The method of claim 1, wherein the subject has a neurodegenerative disorder.

12. (Original) The method of claim 11, wherein the neurodegenerative disorder is Parkinson's disease.

13. (Currently amended) A method of altering expression of glutamic acid decarboxylase (~~GAD~~ GAD_{65}) in a region of the central nervous system (CNS) of a subject having a disorder which causes morphological and/or functional abnormality of a neural cell or population of neural cells comprising:

identifying a target site in the CNS that requires modification;

delivering a vector comprising a nucleotide sequence encoding glutamic acid decarboxylase ((~~GAD~~ GAD_{65})) to the target site in the CNS; and

expressing (~~GAD~~ GAD_{65}) in the target site.

14. (Original) The method of claim 13, wherein the vector is a viral vector.

15. (Original) The method of claim 14, wherein the a viral vector is selected from the group consisting of adenovirus vectors, herpes virus vectors, parvovirus vectors, and lentivirus vectors.

16. (Original) The method of claim 14, wherein the a viral vector is an adeno-associated viral vector.

17. (Withdrawn) The method of claim 13, wherein the vector is a non-viral vector.

18. (Withdrawn) The method of claim 17, wherein the non-viral vector is a liposome-mediated delivery vector.

19. (Original) The method of claim 13, wherein the vector is delivered using stereotaxic delivery.

20. (Original) The method of claim 13, wherein the target site in the central nervous system is a region of the brain.

21. (Original) The method of claim 20, wherein the region of the brain is selected from the group consisting of basal ganglia, subthalmic nucleus (STN), pedunculopontine nucleus (PPN), substantia nigra (SN), thalmus, hippocampus, cortex, and combinations thereof.

22. (New) The method of claim 11 wherein the target site is associated with the neurodegenerative disorder and symptoms of the neurodegenerative disorder are ameliorated by expression of GAD_{65} at the target site.

23. (New) The method of claim 13 wherein the target site is associated with the disorder and symptoms of the disorder are ameliorated by expression of GAD_{65} at the target site.